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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,838	11/24/2003	Mickael Gros-Jean	02-GR1-323	3616

23334 7590 07/20/2007  
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EXAMINER
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CHEN, BRET P

ART UNIT	PAPER NUMBER
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1762

MAIL DATE	DELIVERY MODE
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07/20/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/720,838	Applicant(s) GROS-JEAN ET AL.	
	Examiner B. Chen	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 and 40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

Claims 1-15, 40 are pending in this application.

A new 112 rejection and art rejection in view of Chiu have been inserted. The examiner regrets the inconvenience.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6, 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, the term “for example nitrogen” is deemed vague and confusing as to whether the carrier gas is to be nitrogen. Clarification and appropriate amendments are requested.

In claim 8, the term “for example silicon” is deemed vague and confusing as to whether the carrier material is to be silicon. Clarification and appropriate amendments are requested.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-5, 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiu.**

Chiu teaches a metal-organic CVD deposition of tantalum oxide using oxygen and TBTDET (tert-butylimidotris(diethylamido)tantalum). In the experimental section on col.1 of p.225, the reference specifically teaches a deposition temperature between 573 and 873 K and a pressure of 1 Torr. The substrate can be silicon (col.1 p.224). However, the reference fails to teach a carrier material.

It is noted that the reference is directed to a MOCVD process which implies that a substrate was utilized. It is the examiner's position that the carrier material is merely a substrate.

In addition, with respect to the partial pressure being greater than or equal to 25 mTorr, it is the examiner's position that this is taught by Chiu as noted in the below calculations.

$$P_1V_1 + P_2V_2 = PV \quad 1 \Rightarrow \text{partial pressure of Ar+TBTDET}$$

$$2 \Rightarrow \text{partial pressure of O}_2$$

$$P_2 = 200/210 \approx 0.95 \text{ Torr}$$

$$P_1 = 10/210 \approx 0.05 \text{ Torr} = 50 \text{ mTorr}$$

Since the mass of TBTDET is much greater than that of Ar, the majority of the partial pressure in  $P_1$  is attributed to TBTDET. Therefore, one skilled in the art can reasonably assume that greater than 50% is attributed to TBTDET. Hence, the TBTDET partial pressure must be greater than 25 mTorr.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claims 6-7, 9-15, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu.** Chiu teaches a metal-organic CVD deposition of tantalum oxide using oxygen and TBTDET (tert-butyylimidotris(diethylamido)tantalum) as noted above. However, the reference fails to teach nitrogen as a carrier gas.

It is well known in the art that carrier gases can comprise inert gases or reactant gases such as nitrogen or oxygen. It would have been obvious to substitute nitrogen for argon as the carrier gas with the expectation of obtaining similar results.

In claims 9-12, the reference fails to teach the appropriate substrate material. It is well known in the art to utilize different substrate depending on the use of the final product. It would have been obvious to utilize different substrate materials with the expectation of obtaining similar results for use in different applications.

In claims 7, 13, 40, the reference fails to teach the appropriate time and thickness. It is well known in the art to vary time depending on the desired thickness of the film. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as thickness through routine experimentation in the absence of a showing of criticality.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to B. Chen whose telephone number is (571) 272-1417. The examiner can normally be reached on 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bc  
7/18/07



**BRET CHEN**  
**PRIMARY EXAMINER**